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Kernel versions of orthogonal transformations such as principal components are based on a dual formulation also termed Q-mode analysis in which the data enter into the analysis via inner products in the Gram matrix only. In the kernel version the inner products of the original data are replaced by inner products between nonlinear mappings into higher dimensional feature space. Via kernel substitution also known as the kernel trick these inner products between the mappings are in turn replaced by a kernel function and all quantities needed in the analysis are expressed in terms of this kernel function. This means that we need not know the nonlinear mappings explicitly. Kernel principal component analysis (PCA) and kernel minimum noise fraction (MNF) analyses handle nonlinearities by implicitly transforming data into high (even infinite) dimensional feature space via the kernel function and then performing a linear analysis in that space. Although more generally useful the techniques are here used for change detection in multispectral remote sensing images.